

## ABSTRACT

Methods and associated materials for transducing mesenchymal stem cells with a desired nucleic acid. Mesenchymal stem cells are a recently discovered kind of stem cell for which suitable transfer vehicles are still desired. Typical gene delivery vehicles such as the adenoviruses or adeno associated viruses have no particular tropism for mesenchymal stem cells. Also disclosed is gene therapy using adenoviruses provided with tropism for mesenchymal stem cells.